

CLAIMS

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1. A method of treating a solution of a polymer by the use of magnetically attractable beads which do not specifically bind the polymer, comprising the steps of:

10      - suspending the magnetically attractable beads in the solution,  
          - precipitating the polymer out of solution whereby it becomes non-specifically associated with the beads,  
15      - applying a magnetic field to draw down a precipitate of the beads and the associated polymer, and  
          - separating the precipitate from a supernatant liquid.

20 2. A method as claimed in Claim 1, comprising the additional steps of:

25      - adding liquid to the precipitate to re-dissolve the polymer and re-suspend the beads.  
          - applying a magnetic field to draw down the beads, and  
          - separating a supernatant liquid containing the polymer from the beads.

3. A method as claimed in Claim 1 or Claim 2, wherein the solution is in an aqueous medium.

30 4. A method as claimed in any one of Claims 1 to 3, wherein the polymer is a biopolymer.

5. A method as claimed in Claim 1 or Claim 2, wherein the biopolymer is nucleic acid.

35 6. A method as claimed in Claim 4, wherein the biopolymer precipitated comprises protein as well as nucleic acid.

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7. A method as claimed in Claim 6, comprising the additional steps of:

- adding liquid to the precipitate to selectively re-dissolve the protein and re-suspend the 5 beads,

- applying a magnetic field to draw down a precipitate of the beads and the associated nucleic acid,

10 - separating a supernatant liquid containing the protein from the precipitate,

- adding liquid to the precipitate to redissolve the nucleic acid and re-suspend the beads,

- applying a magnetic field to draw down the beads, and

15 - separating a supernatant liquid containing the nucleic acid from the beads.

8. A method as claimed in Claim 4, wherein the biopolymer is bacteriophage and/or virus and/or cell.

9. A method as claimed in Claim 4, wherein the 20 starting solution comprises a mixture of similar biopolymers, one of which is selectively precipitated out of solution in the presence of the beads.

10. A method as claimed in Claim 9, wherein the starting solution is a cell lysate comprising protein, 25 membrane, bacterial DNA and low molecular weight nucleic acids, and the biopolymer precipitated out of solution comprises the protein, membrane and bacterial DNA but not the low molecular weight nucleic acids.

11. A method for recovering low molecular weight 30 nucleic acids from a starting solution of bacteriophage and/or virus, which method comprises the steps:-

- precipitating the bacteriophage and/or virus and/or cell by the method of Claim 8,

- lysing the bacteriophage and/or virus to 35 form a cell lysate solution, and

- treating the cell lysate solution by the

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method of Claim 10.

12. An automated device for performing the method of ~~any one of Claims 1 to 11~~, which device comprises an automated pipettor and a magnet.

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